

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

REC'D 24 JAN 2006



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Applicant's or agent's file reference 18981/838	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/IB 03/04304	International filing date (day/month/year) 29.09.2003 ✓	Priority date (day/month/year) 29.09.2003 ✓
International Patent Classification (IPC) or both national classification and IPC B66B19/00		
Applicant OTIS ELEVATOR COMPANY et al. ✓		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of 4 sheets, including this cover sheet. ✓
	<input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of 4 sheets. ✓

3.	This report contains indications relating to the following items:
I	<input checked="" type="checkbox"/> Basis of the opinion
II	<input type="checkbox"/> Priority
III	<input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	<input type="checkbox"/> Lack of unity of invention
V	<input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	<input type="checkbox"/> Certain documents cited
VII	<input type="checkbox"/> Certain defects in the international application
VIII	<input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 05.08.2004 ✓	Date of completion of this report 23.01.2006
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Eckenschwiller, A Telephone No. +49 89 2399-2088 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/B 03/04304**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1, 2, 4-6 as originally filed
3 received on 26.11.2004 with letter of 22.11.2004

Claims, Numbers

1-11 received on 26.11.2004 with letter of 22.11.2004

Drawings, Sheets

1/3-3/3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/IB 03/04304**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-11
	No: Claims	
Inventive step (IS)	Yes: Claims	1-11
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-11
	No: Claims	

2. Citations and explanations

see separate sheet

Section V

1. EP-A-1245522, which is considered to represent the closest prior art, discloses a method for mounting a car drive machine, said drive machine being mounted on a structure in the hoistway, wherein said drive machine is lifted with a hoist, then placed on support rails for being moved in its end position, whereafter said rails are removed and said drive machine fixedly attached.

The subject-matter of claim 1 differs in that the drive unit is positioned on a support on top of the elevator car, the elevator car is then lifted slightly above said structure, whereafter the support is moved transversally to bring said drive machine above said support, the elevator car is then lowered to place and fix said drive machine on said structure and to transversally remove said support. Therefore the subject-matter of claim 1 is new (Article 22(2) PCT).

The problem to be solved may be regarded as providing an alternative for mounting a drive machine in an elevator hoistway.

Known by the available prior art are mounting methods, in which the drive unit is directly lifted by a hoist. A method, in which the drive machine is temporally placed on top of an elevator car to be lifted by said elevator car is therefore not rendered obvious.

2. Claims 2-10 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.
3. The arrangement according to claim 11 comprising an elevator car and a machine-installation table is designed for implementing the method of dependent claims 3-10 and is as such also new and inventive.

machine is secured to the support frame by means of screws directly in attack in its body.

5 The machine has a block shape and is constituted by a median cylindrical pulley block to which the motor is attached at one extremity and the braking device is attached on the other extremity, this machine being positioned on said sliding plate via its pulley block placed on the plate, the respective motor and brake fastening feet laterally extending beyond with a small amount of play of the edge of the plate and the rear edge of the pulley block
10 resting against a rear stop fold of the plate so that the machine is prepositioned on the latter.

The fixing screws for fixing the machine to said support frame are in attack on the respective motor and brake fastening feet so that when the machine is placed or fixed to the frame, the plate can
15 be removed via a simple movement of the latter inside the residual space existing between the pulley block and said motor and brake fastening feet.

The invention also concerns an arrangement comprising an elevator car in combination with a machine-installation table for
20 implementing the above defined method.

The invention is illustrated hereafter with the aid of an example of embodiment and with reference to the accompanying drawings on which :

- Figure 1 is a perspective view showing the placing of the
25 drive machine of the car on a support table of the car inside an elevator hoistway,

- Figure 2 is a perspective view of the support table receiving the car drive machine, and

- Figures 3 and 4 show the successive mounting of the drive
30 machine on its support frame.

AMENDED CLAIMS

1. Method for mounting a car drive machine (9), especially for elevators having no machine room, the drive machine (9) being to be affixed to a structure in the hoistway, characterised in that it successively consists of positioning said drive machine (9) on a support (23) positioned so as to be suitably on the top of the elevator car (7) and being able to move transversally, to lift the elevator car (7) until the machine is slightly above said structure, to move the support (23) with the machine (9) transversally and outwardly so as to position the machine (9) immediately above its fixing position, to lower the car (7) so as to place and fix the machine (9) on said structure, and to bring said support (23) back transversally so as to free it from the machine (9).

2. Mounting method according to claim 1, the drive machine (9) appearing in the form of a longitudinal shaping block intended to be fixed to the top of two counterweight guide rails (3) and a car guide rail (1) on one side of the elevator hoistway (5), characterised in that it successively consists of positioning said drive machine (9) on a flat support (23) positioned so as to be suitably on the top of the elevator car (7) and being able to move transversally, to lift the elevator car (7) with the aid of an auxiliary lifting device (53) until the machine is slightly above the top of said guide rails (1, 3), to move the flat support (23) with the machine (9) transversally and outwardly so as to position the machine (9) immediately above its fixing position on said rails (1, 3), to lower the car (7) so as to place and fix the machine (9) on the rails (1, 3), to bring said flat support (23) back transversally so as to free it from the machine (9) and subsequently remove it from said car for a new usage.

3. Mounting method according to claim 2, characterised in that said flat support (23) is a table or frame provided with a plate (29) possibly pierced at the passage location of the fixing elements of the machine to the rails (1, 3), said plate (29) being mounted sliding transversally on the table or frame..

4. Mounting method according to claim 2 or 3, characterised in that said table or frame (23) is fixed to a rigid element of the car, for example to the upper crosspiece (25) of the car notch.

5. Mounting method according to one of the preceding claims 2-4, characterised in that said auxiliary lifting device (53) is a man-lift winching gear connected between the car and the hoistway ceiling.

6. Mounting method according to one of the preceding claims 2-5, characterised in that the machine (9) is fixed directly to the rails (1, 3) by means of fastening brackets.

7. Mounting method according to one of claims 2 to 5, characterised in that the machine (9) is fixed onto a support frame (11) fixed to the top of the rails (1, 3).

8. Mounting method according to claim 7, characterised in that the machine (9) is secured to the support frame (11) by means of screws directly in attack in its body.

9. Mounting method according to claim 7 or 8, characterised in that the machine (9) is of longitudinal shape and is made up of a median cylindrical pulley block (13), the motor (15) being attached to said pulley at one extremity and the brake (17) at the other extremity, this machine being positioned on said sliding plate (29) via its pulley block (13) placed on the plate (29), the respective motor and brake fastening feet (19) laterally projecting with a small amount of play beyond the edge of the plate (29) and the rear edge of the pulley block (13)

resting against a rear stop fold (39) so that the machine (9) is prepositioned on the latter, the movement of the plate (29) being effected over a given length.

10. Mounting method according to one of claims 7 to 9, characterised in that the fixing screws of the machine (9) for fixing the latter to said support frame (11) are in attack on the respective brake and motor feet (19) so that when the machine (9) is placed or fixed on the frame (11), the plate (29) can be removed by merely moving the latter in the residual space between the pulley block (13) and said motor and brake fastening feet (19).

11. Arrangement comprising an elevator car and a machine-installation table to implement the method defined according to any one of the preceding claims 3-10, characterised in that the elevator car comprises a cross piece (25) on its top constituting a rigid support element for the machine-installation table, and that said machine-installation table is mounted on said cross piece (25), being provided with a plate (29) sliding transversally on the table, the machine being positioned precisely on the plate and also the table on the car so as to allow its prepositioning on the machine support frame in the hoistway at a certain height of the car and after the transversal sliding of the plate on the table.